

No. 32/8/2013-14/NSM

भारत सरकार Government of India /

नवीन और नवीकरणीय ऊर्जा मंत्रालय / Ministry of New & Renewable Energy
(Grid Solar Power Division)

Block NO. 14, CGO Complex, Lodi Road,
New Delhi-110 003, Dated: 05th March 2015

To,

1. The Chairman & Managing Director, NTPC
2. The Chief Executive Officer, NVVN

Subject: Implementation of Project for setting up of 15,000 MW of Grid-connected Solar PV Power plants through NTPC Ltd./ NTPC Vidyut Vyapar Nigam Limited (NVVN) under National Solar Mission

Sir,

I am directed to convey the sanction of the President of India for implementation of a Scheme for setting up of 15,000 MW of Grid-connected Solar PV Power plants through NTPC Ltd./ NTPC Vidyut Vyapar Nigam Limited (NVVN) under National Solar Mission in a span of 5 years from 2014-15 to 2018-19; through developers in three tranche of 3000 MW, 5000 MW and 7000 MW as detailed under.

2. The scheme will be implemented through the NTPC /NVVN (the power trading arm of NTPC Limited) under Ministry of Power. The scheme envisages setting up of Grid-connected solar PV power plants of 15,000 MW aggregate capacity in three tranches:

Tranche-I : 3,000 MW : 2014-15 to 2016-17

Tranche-II : 5,000 MW: 2015-16 to 2017-18

Tranche-III : 7,000 MW: 2016-17 to 2018-19

These projects will be developed through project developers who may be from private or public sector. NTPC is also setting up some solar plants on their own as generator or owner. This proposal does not include NTPC's own solar power plants.

2.1 In Tranche-I, which will be Batch-II of Phase-II of National Solar Mission, 3000 MW capacity of solar PV power plants will be based on bundling of solar power (3000 MW) with unallocated thermal power (1500 MW) in the ratio of 2:1 (in MW terms), for which the required 1500 MW unallocated thermal power has been made available by the Ministry of Power. The bundled power will be allotted to various States that come forward to (i) provide land for setting up the solar power projects and (ii) purchase a major portion of the bundled solar power for consumption within the State (iii) ensure connectivity to the solar power project. The capacity allotted to each such State will be set up through developers, to be selected through international competitive bidding by NTPC /NVVN. Both private and government companies would be free to bid for projects.

2.2 1000 MW capacity out of the 3000 MW under the bundling scheme will be set up on land already identified in Andhra Pradesh. The balance 2000 MW capacity under the Bundling Scheme will be allotted in other interested States that come forward.

2.3 The 3,000 MW capacity Solar PV plants under Tranche-I will be set up based on model of bundling of solar power with unallocated thermal power and fixed levellised tariffs. The mechanism of operation of this model shall be as enumerated below:

- (i) The eligible plant capacities will be minimum 10 MW and maximum may be fixed for each State Lot of projects on the basis of size of the lot, land availability and requirement. The plant capacities will therefore differ from State to State between these limits.
- (ii) The bidding will be State specific and conducted through e-bidding. NVVN/NTPC will develop detailed guidelines for e-bidding. It will be based on fixed levellised tariffs. The developers will submit bids quoting a fixed levellised tariff for the entire project duration of 25 years. They will then be committing to sell power from their plants to NTPC /NVVN at the quoted tariff over the 25 year period.
- (iii) There will be State specific tenders. The selection of bids will be done based on the tariff quoted by the bidders. Selection will be based on lowest quoted levellised tariffs. The tariff bid cannot be higher than the Applicable Tariff on the day bids are received as may be fixed by the State Electricity Regulatory Commission (SERC) for the State where the projects are to be set up/ Central Electricity Regulatory Commission (CERC). Once agreed, then the tariff will be applicable for 25 years and cannot be changed by the State Electricity Regulatory Commission for this period.
- (iv) The bidders will be free to avail fiscal incentives like accelerated depreciation, concessional customs and excise duties, tax holidays, etc. available for such projects. The same will not have any bearing on comparison of bids for selection. As equal opportunity is being provided to all bidders at the time of tendering itself, it is upto the bidders to avail various tax and other benefits.
- (v) Solar power generated from the selected plants shall be purchased directly by NTPC /NVVN at the quoted tariffs. NTPC /NVVN will bundle this solar power with unallocated Thermal Power from Coal based stations of NTPC on 2:1 basis (2 MW of solar with 1 MW of thermal), and sell the bundled power to willing State Utilities under 25 years Power Sale Agreements (PSAs), at weighted average tariff of the solar and thermal components plus their proposed trading margin of Rs.0.07/kWh, which is expected to be attractive for the utilities. The tariff for thermal power component will be as per rates fixed by CERC for power from the respective thermal power plant from which power is allotted.
- (vi) The developers will be free to reconfigure and repower their plants from time to time during the PPA duration. However, the NTPC /NVVN will be obliged to buy power only within the Capacity Utilisation Factor (CUF) range laid down in Power Purchase Agreement (PPA) as per guidelines. Excess power generated whether in normal course or through repowering will be purchased at a notional support price of Rs.3/kWh only. It will be at the option of the

developer to offer it (excess power) to NTPC/ NVVN or sell in open market. Further, the developer will be free to sell power to any one for period beyond 25 years of firm PPA offered by NTPC/ NVVN.

2.4 MNRE will devise suitable mechanism for implementation of 12,000 MW capacity Solar PV projects under Tranche-II and Tranche-III keeping minimum support from the Government, to be determined after getting some experience while implementing Tranche-I. This Government support could be in the form of low cost long-tenure loans or other means.

The time period indicated for these tranches can be fast tracked by MNRE based on experience of Tranche-I.

3. Implementation of the Project

MNRE will finalize detailed guidelines for implementation of the Project for setting up of 15,000 MW Solar PV power plants under the 3 tranches, covering both technical and financial aspects.

Only commercially established and operational technologies will be promoted under all the tranches to minimize technology risk and to achieve timely commissioning of the plants.

4. Domestic Content Requirement (DCR)

Some capacity will be earmarked out of the total procurement under this scheme with provisions of domestically manufactured solar cells as well as modules. MNRE will prescribe the quantity to be fixed with DCR in each tender based on the prevailing market conditions from time to time. Bids received under both the categories (one with DCR requirement and the other without any such requirement) will be evaluated and successful bidders selected independently. Further, this DCR will also be technology agnostic i.e., applied on both the crystalline silicon and thin film SPV cells and modules.

5. Role of NTPC Limited /NTPC Vidyut Vyapar Nigam Limited (NVVN)

The NTPC Limited /NTPC Vidyut Vyapar Nigam Limited (NVVN) shall issue the Request for Selection (RfS) document inviting developers to submit the bids quoting their fixed 25-year levellised tariffs for sale of power from the Solar PV power plants they propose to set up in specified States through e-bidding for which NVVN/ NTPC will develop detailed guidelines. Further, NTPC /NVVN will evaluate the bids received, issue Letter of Intent (LoI) to successful bidders, sign Power Purchase Agreements (PPAs) with them for purchase of the solar power and also sign back-to-back Power Sale Agreements (PSAs) with interested State Utilities/ Discoms for sale of solar power.

Apart from undertaking the trading of the solar power from the plants, NVVN will also coordinate with State agencies for subsequent activities related to monitoring of commissioning of plants, performance monitoring and reporting on regular basis during the tenure of the PPAs.

6. Role of State Governments/ Nodal Agencies

States will be requested to indicate the quantum of Bundled Solar Power they would be interested in procuring out of the total 4500 MW (3000 MW solar bundled with 1500 MW thermal) based on their Renewable Purchase Obligations (RPOs). MNRE will carry out the formulation for actual allocation of bundled power based on criteria in consultation with NTPC /NVVN, keeping their commercial interest in view. Any dispute can be referred to MNRE. If substantial quantity is requested by a State and if it is also willing to allocate land then state specific tenders may be done.

State Nodal Agencies will be responsible in providing support in several areas like grid connectivity, land acquisition, water availability, etc. monitoring of progress of the projects and their commissioning and related activities.

Land for the first lot of Tranche-I in Andhra Pradesh will be provided in the solar park being developed in Andhra Pradesh. Andhra Pradesh Government will make available land on lease/ ownership basis to the Solar Park Joint Venture Company. This company will then make land available to the developers on long-term lease (not less than 27 years) in accordance with the project requirement. In cases, where the land is to be acquired from private land owners, long-term lease arrangement will be preferred so that the land owner gets a regular return. The land for the projects may be on lease / ownership / any other legally valid instrument allowing the developers to raise loans if required. Developers may opt to bid on their own land. Alternatively, the scheme may allow developer to purchase land on their own subject to availability of evacuation.

7. Setting up of Payment Security Mechanism/ Working Capital Fund

A Payment Security Mechanism / Working Capital Fund with an estimated corpus of Rs. 2300 crore to cover 3 months payment for bundled capacity of 3000 MW of Solar Capacity with 1500 MW NTPC Coal Power, will be set up to ensure bankability of PPAs and timely payment to developers. This will be evolved through collaborative efforts of Government of India and Solar Project Developers. The modalities for setting up of Payment Security Mechanism / Working Capital Fund will be finalized subsequently. Accruals from encashment of Bank Guarantees, penalties on developers, etc. will also go into this fund.

8. Timelines for Implementation of the Project

NVVN will tender out and award the Solar PV Plants to be set up in Andhra Pradesh out of the first tranche. The remaining capacity of Tranche-I to be set up in other interested States will be completely bid out by December 2015 subject to confirmation from respective states for availability of land and connectivity and conformation for purchase of power. Around thirteen months subject to transmission system being built will be given for completing the projects as a definite time frame from the signing of their Power Purchase Agreements (PPAs) subject to provisions of the PPAs and the guidelines of the scheme to be issued by MNRE in consultation with NTPC /NVVN.

9. If there is need for making any changes in provisions/ guidelines as may be required for smooth implementation, MNRE will be competent to make such changes with the approval of Minister-in-charge.

This issues in exercise of powers delegated to this Ministry and with the approval of competent authority.

Yours faithfully,


(Dr. A.K. Tripathi)

Sr. Director

Phone: 011-24363035

Copy for information and necessary action to:-

1. Cabinet Secretariat, Rashtrapati Bhawan, New Delhi
2. Secretary, Ministry of Power, Government of India
3. Central Government Ministries/Departments concerned;
2. Principal Director of Audit, Scientific Audit-II, DGACR Building. I.P. Estate, Delhi-02
3. All State/UT Energy Secretaries
4. All Heads of State/UT Nodal Agencies
5. All State/UT Utilities
- 6.

Internal Distribution:

1. PS to Hon'ble Minister, NRE
2. PSO to Secretary, MNRE
2. JS (TK)/ JS&FA, MNRE
3. DG, NISE, Gwalpahari, Gurgaon
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4. Dir. (NIC) to upload this on the Ministry's website.
6. Hindi Section for Hindi version
8. Sanction folder


(A.K. Tripathi)

Sr. Director

Phone: 011-24363035

National Solar Mission

Phase-II (2013-17)

**Guidelines for Selection of 3000 MW Grid – Connected Solar PV Power
Projects under Batch-II**

“State Specific Bundling Scheme”

Government of India

Ministry of New and Renewable Energy

March 2015

SECTION-I

BACKGROUND AND INTRODUCTION

1.0 Preamble

The National Solar Mission (NSM) launched in January 2010 is a major initiative of the Government of India (GoI) with active participation from States to promote utilization of solar energy to supplement the country's energy needs. It aims at establishing India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible. The Mission had set a goal, amongst others, for deployment of 20,000 MW grid connected solar power capacity by 2022 in 3 phases (1000 MW in first phase up to 2012-13 -, 9000MW in second phase from 2013 to 2017and 10,000 MW in third phase from 2017 to 2022). GoI is working on substantially scaling up these targets through consultations with the various Stakeholders.

In order to facilitate grid connected solar power generation in the first phase, a mechanism of "bundling" relatively expensive solar power with thermal power from the unallocated quota of the Government of India (Ministry of Power) generated at NTPC coal based stations, which is relatively cheaper, and onward sale of the bundled power to Distribution Utilities at an affordable price, was adopted. A scheme for selection of 1000 MW Grid-connected solar power projects based on this Mechanism was implemented through NTPC Vidyut Vyapar Nigam Limited (NVVN). In the second phase, it is envisaged to select solar power projects under various Central Schemes. These include the Viability Gap Funding scheme for Batch-I of 750 MW capacity Solar PV projects that has already been introduced and is being implemented through Solar Energy Corporation of India (SECI).

1.1 Status and achievement against 1000 MW Capacity Grid-Connected Solar Power Projects under Phase-I Bundling Scheme implemented through NVVN:

Solar PV as well as Solar Thermal power projects with an aggregate capacity of 970 MW (besides 84 MW selected under Migration Scheme) were selected in two batches (Batch-I during 2010-11 and Batch- II during 2011-12) through a process of tariff based reverse bidding. The resulting tariffs in Batch-I for SPV projects ranged between Rs.10.95 and Rs.12.76 per unit, with average of Rs.12.12 per unit and for Solar Thermal Projects the tariff ranged between Rs.10.49 and Rs.12.24 per unit, with average tariff being Rs.11.48 per unit. In Batch-II, for Solar PV Projects, the tariff ranged between Rs.7.49 and Rs.9.44 per unit, with average tariff being Rs.8.77 per unit. The Solar

Power from these plants is being purchased by NVVN and is being sold to Distribution Utilities/ Discoms after bundling with power from the unallocated quota of power from Coal Based Stations of NTPC on equal capacity (MW) basis, thus effectively reducing the average per unit cost of solar power. A total capacity of 718 MW has been commissioned so far under Phase-1.

1.2 Phase-II Batch-I: 750 MW Viability Gap Funding (VGF) Scheme:

This scheme for setting up of 750MW of Grid Connected Solar PV Projects with VGF support from National Clean Energy Fund (NCEF) is being implemented through Solar Energy Corporation of India (SECI). It entails purchase of power from developers at a fixed tariff of Rs.5.45/ unit (Rs.4.75/unit in case benefit of Accelerated Depreciation is availed) and payment of VGF to the developers as per their bids, limited to a maximum of Rs.2.5crore/MW). Bids for the same (reverse bidding on the VGF) were invited by SECI in October, 2013 in two Categories: 375MW Capacity under Domestic Content Requirement (DCR) and 375 MW Capacity under Open Category. Power Purchase Agreements with the successful bidders / developers have since been signed in March 2014. The Projects have a Schedule of Commissioning of 13 Months from the Date of Signing of PPA.

1.3 Phase-II Batch-II Scheme:

1.3.1 MNRE now proposes to add a total Solar PV capacity of 3,000 MW to be implemented through NVVN as part of Phase-II. The scheme envisages setting up of Grid-connected solar PV power plants of 3,000 MW aggregate capacity through open competitive bidding.

1.3.2 Phase-II, Batch-II : State Specific Bundling Scheme

These guidelines are for 3000 MW. MNRE will indicate the total quantity for various States based on response received from the States. NVVN may then procure that quantity through one or more State specific tenders.

Scope of the Guidelines

The scope of these guidelines is limited to providing the necessary policy and operational framework for development of projects under the above mentioned “State Specific Bundling Scheme”. These guidelines are independent and will have no bearing on the projects already selected under earlier schemes of NSM Phase-I & Phase-II, Batch - I.

SECTION-II

2.1 NSM Phase-II Batch-II State Specific Bundling Scheme for 3000 MW Solar PV Projects

The 1000 MW Bundling Scheme introduced under NSM Phase-I has been successful in incentivizing setting up of a large number of Solar Power Projects and minimizing the impact of tariff on the distribution companies. The proposed 3000 MW Solar PV Projects to be selected under Batch-II of NSM Phase-II, will be implemented by NVVN on Solar Parks to be developed through association of Central and State Agencies / Land provided by State Governments or Land identified and arranged by Solar Power Developers in the respective States.

MNRE is facilitating development of 25 Solar Parks to accelerate the Solar Capacity Addition in various States. The bidder will approach the Solar Park Implementation Agency (**SPIA**) for allotment of land and connectivity. The **SPIA** shall provide the details of land and the timelines for availability, allotment, possession and connectivity for the projects before submission of bids. The **SPIA** will provide the Cost of Land, Annual Charges, and Connectivity Charges etc. which the developer would take into consideration in their bid.

There could be three (3) situations:

- (A) Entire tendered quantity can be located in the Solar Parks in the State;
- (B) Part of tendered quantity can be located in Solar Park and part outside Solar Park; and
- (C) Entire tendered quantity can be located outside the Solar Park.

2.2 Objectives:

The main objectives of the scheme are as follows:

- i. To facilitate the scale up of solar capacity addition under NSM Phase-II and achieve economies of scale
- ii. To supplement grid power
- iii. To facilitate fulfilment of RPO requirement of the obligated entities.
- iv. To facilitate speedier implementation of the new projects to be selected to meet the Phase-II target of NSM;
- v. Provide long term visibility and road map for solar power development enabling creation of India as manufacturing hub in the Solar PV.

2.3 Mechanism of Operation:

The 3,000 MW Solar PV Capacity will be set up based on the model of bundling of solar power with unallocated thermal power and fixed levellised tariffs. The mechanism of operation of this model shall be as enumerated below:

- 1) Minimum project size will be 10 MW. NVVN will divide the entire quantity into projects of uniform size as far as possible. NVVN may also divide the bid lot into different sized projects also to match plot sizes in the solar park or to provide fair participation. For situation B & C as given in Para 2.1 above, range of project size starting from 10 MW may be given by NVVN.
- 2) The bidding will be State specific and conducted through e-bidding. It will be based on fixed levelled tariffs. The developers will submit bids quoting a fixed levelled tariff for the entire project duration of 25 years. They will then be committing to sell power from their plants to NVVN at the quoted tariff over the 25 year period.
- 3) The selection of bids will be done based on the tariff quoted by the bidders. Selection will be based on lowest quoted levelled tariffs. The quoted tariff cannot be higher than the Central Electricity Regulatory Commission (CERC) Approved Applicable Tariff as on the last date of receipt of financial bids by NVVN.
- 4) The bidders will be free to avail fiscal incentives like Accelerated Depreciation, Concessional Customs and Excise Duties, Tax Holidays, etc. as available for such projects. The same will not have any bearing on comparison of bids for selection. As equal opportunity is being provided to all bidders at the time of tendering itself, it is up to the bidders to avail various tax and other benefits. No claim shall arise on NVVN for any liability if bidders are not able to avail fiscal incentives and this will not have any bearing on the discovered tariff.
- 5) NVVN will purchase the Solar Power generated from the selected Solar PV plants at the quoted tariffs and Thermal Power at the Tariff as determined by CERC as per Regulations from time to time for power from the respective Thermal Power Plant from which power is allocated. NVVN will bundle the Solar Power with unallocated Thermal Power from Coal based stations of NTPC on 2:1 basis (2 MW of Solar with 1 MW of Thermal), and sell the Bundled Power to willing State Utilities under 25 years Power Sale Agreements (PSAs), at Weighted Average Tariff of the Solar and Thermal components plus Trading Margin of Paise Seven (7) per kWh. The weighted average of tariff will be separately calculated for each State for the Solar Power.

2.4 Solar PV Projects

MNRE will fix the lot size for each state out of the 3000 MW and define the quantum of “DCR” in each lot. Thereafter, NVVN will issue Request for Selection (RfS) in one or more than one Lot as per the preparedness in the Solar Park in that State and acceptance of the State/ Discom to buy

the power.

This scheme provides for deployment of only Solar PV Technology Projects. However, the selection of projects would be technology agnostic and crystalline silicon or thin film or CPV, with or without trackers can be installed.

Under the scheme, the developer has the option of Leasing Solar Plant equipments from Foreign parent/affiliate.

2.5 Definitions

"Act" or "Electricity Act, 2003" shall mean the Electricity Act, 2003 and include any modifications, amendments and substitution from time to time;

"Affiliate" shall mean a company that, directly or indirectly,

controls, or

is controlled by, or

is under common control with, a Company developing a Project or a Member in a Consortium Developing the Project and control means ownership by one company of at least 26% (twenty six percent) of the paid up share capital of the other company.

"Applicable Tariff" shall be the quoted Tariff by the selected project developers.

"Bidding Consortium" or "Consortium" shall refer to a group of companies that has collectively Submitted the response in accordance with the provisions of these guidelines.

"CERC Approved Applicable Tariff" shall mean the Tariff as notified by Central Electricity Regulatory Commission for Solar PV Projects applicable as on the Last Date for receipt of financial bids by NVVN. .

"Company" shall mean a body corporate incorporated in India under the Companies Act, 1956 or the Companies Act, 2013 as applicable.

"Control" The control shall mean holding more than 50% of paid-up share capital.

"CTU" or Central Transmission Utility shall mean the Central Transmission Utility as defined in sub-section (10) of Section 2 of the Act;

"Financial Closure" as defined in clause 3.11

"Group Company" of a company means (i) a company which, directly or indirectly, holds 10% (ten percent) or more of the paid up share capital of the company or (ii) a company in which the company, directly or indirectly, holds 10% (ten percent) or more of the paid up share capital of such company or (iii) a company in which the company, directly or indirectly, has the power to direct or cause to be directed the management and policies of such company whether through the ownership of securities or agreement or any other arrangement or otherwise or (iv) a company which, directly or indirectly, has the power to direct or cause to be directed the management and policies, of the Company whether through the ownership of securities or agreement or any other arrangement or otherwise or (v) a company which is under common

control with the company, and control means ownership by one company of at least 10% (ten percent) of the paid up share capital of the other company or power to direct or cause to be directed the management and policies of such company whether through the ownership of securities or agreement or any other arrangement or otherwise.

Provided that a financial institution, scheduled bank, foreign institutional investor, non-banking financial company, and any mutual fund shall not be deemed to be Group Company, and its shareholding and the power to direct or cause to be directed the management and policies of a company shall not be considered for the purposes of this definition unless it is the Project Company or a Member of the Consortium developing the Project.

“Host State” shall mean the State in which the Solar Power Projects under the State Specific Bundling Scheme are to be set – up.

“Inter-connection point / Delivery point / Metering point” shall mean the point at 33kV or above where the power from the Solar Power Project is injected into the Pooling Substation at the Solar Park or STU / CTU substation as applicable. The Metering shall be done at this interconnection point where the power is injected into the Pooling Substation at the Solar Park or STU / CTU system i.e. Delivery Point. For interconnection with grid and metering, the developers shall abide by the relevant CERC Regulations, Grid Code, and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time.

“Joint Control” shall refer to a situation where control is equally distributed among the interested parties.

"Paid-up share capital" means such aggregate amount of money credited as paid-up as is equivalent to the amount received as paid up in respect of shares issued and also includes any amount credited as paid up in respect of shares of the company, but does not include any other amount received in respect of such shares, by whatever name called;

Paid-up share capital includes:

Paid-up equity share capital and

Fully, compulsorily and mandatorily convertible Preference shares and

Fully, compulsorily and mandatorily convertible Debentures.

“Lead Member of the Bidding Consortium” or **“Lead Member”**: There shall only one Lead Member, having the shareholding more than 50% in the Bidding Consortium and cannot be changed till 1 year of the Commercial Operation Date (COD) of the Project;

“Parent” shall mean a company, which holds at least 26% of paid up share capital either directly or indirectly in the Project Company or a Member in a Consortium developing the Project.

“Pooling Substation” shall mean an intermediary Substation where more than one Solar PV Project may connect for further connectivity through a common transmission line to STU / CTU System for evacuation of power.

“Project” is defined by separate points of injection into the grid at interconnection point / delivery point / metering point at Pooling Substation of the Solar Park or STU / CTU substation as the case maybe. Each project must also have a separate boundary, control systems and

metering.

“Project Commissioning” the Project will be considered as commissioned if all equipment as per rated project capacity has been installed and energy has flown into grid.

‘Project Financing Arrangements’ means arrangement of necessary funds by the Project Developer either by way of commitment of funds by the company from internal resources and/or tie up of funds through a bank / financial institution by way of sanction of a loan.

“Project Developer” shall mean Bidding Company or a Bidding Consortium submitting the Bid. Any reference to the Bidder includes Bidding Company / Bidding Consortium/ Consortium, Member of a Bidding Consortium including its successors, executors and permitted assigns and Lead Member of the Bidding Consortium jointly and severally, as the context may require”;

“SECI” shall mean Solar Energy Corporation of India.

“Solar PV Project” means the Solar Photovoltaic power project that utilize direct conversion of sunlight into electricity through Photovoltaic technology.

“Solar Park” shall mean concentrated zone of development of solar power generation projects and provides an area that is will characterized, with proper infrastructure and access to amenities. Solar Park will also facilitate developers by reducing the number of required approvals.

“Solar Park Company” means a Company formed for creation of necessary infrastructure facilities for implementation of the Solar Parks.

“Solar Park Implementing Agency” means the Agencies which will be involved in overall implementation of the Solar park in a State. The Agencies could be SECI, State Governments and their Agencies or private sector companies as defined in MNRE scheme for Development of Solar Parks and Ultra Mega Solar Power Projects in the country.

“STU” or State Transmission Utility shall mean the Board or the Government Company notified by the respective State Government under Sub-Section I of Section 39 of the Act.

“Technology Partner” shall mean an entity from which the Bidder proposes to take technology support. The word entity means any entity in case it is not providing share capital commitment to a bidding company or consortium. However in case share capital commitment is being provided by the technology provider to a bidding company or consortium then it shall only be a company. This entity/ company can be a Member in more than one Bidding Consortium provided that, it has less than 10% of paid up share capital commitment in each Consortium;

“Trading Margin” Trading Margin is the difference between the Weighted Average Purchase Price of Bundled Power by NVVN from SPDs & NTPC and the Sale Price of Bundled Power by NVVN to the State Utilities / DISCOMs / Bulk Consumers. NVVN shall Charge a Trading Margin @7 Paisa/kWh.

“Ultimate Parent” shall mean a company, which owns at least twenty six percent (26%) of paid up share capital either directly or indirectly in the Parent and Affiliates.

SECTION-III
GUIDELINES FOR SELECTION OF SOLAR PV PROJECTS

3.1 Capacity of Each Project

The Capacity of each Project under the State Specific Bundling Scheme shall be at least 10 MW and in multiples thereof. However the Minimum and Maximum Capacity of the Project in each State would depend upon the Lot Size and Availability of Land in the State. This shall be decided by NVVN. The Minimum and Maximum Project Capacity shall be mentioned in the State Specific RfS. The maximum capacity for single bidder may be fixed by NVVN as in accordance with land availability, expected competition and States' views, etc. In case of situation A as given in para 2.1, the entire quantity to be bid out will be divided into projects of equal sizes. In case equal sizes of projects are not possible, then it may be grouped in 2 to 5 sizes. In case of situations of B or C under para 2.1, range of sizes may be specified with minimum being 10 MW. The Project Capacity in MW is the installed Capacity of the Power Plant / Maximum Power Output (AC) from the Solar Power Project which can be scheduled at the Delivery Point/ Inter-connection point during any time block of the day.

MNRE will fix the lot size for each state out of the 3000 MW and define the DCR quantity. Thereafter, NVVN will tender out the lot in one bid or in more than one bid depending on the preparedness in the solar park in that state, requirement of the States and expected responses.

Number of Applications by a Company

The total capacity of Solar PV Projects to be allotted to a Company including its Parent, Affiliate or Ultimate Parent-or any Group Company shall be finalized by NVVN and it may consult the Host State, if required. NVVN shall intimate the upper limit of the capacity to be allotted to a company including its Parent, Affiliate or Ultimate Parent-or any Group Company in the State Specific RfS. However, bids under two separate categories can be submitted as per provisions under Clause 3.5 (D). The Project Developer shall submit one single application in the prescribed format detailing all projects for which the developer is submitting the application.

3.2 Request for Selection for Short-listing of Projects

NVVN shall invite project developers to participate in the Request for Selection (RfS) for installation of Solar Photovoltaic Power Plants on Build Own Operate (B-O-O) basis under this scheme. The Project Developer shall submit the RfS to NVVN as per Schedule notified by NVVN.

3.3 Processing Fees

The SPDs shall submit non-refundable processing fee of Rs. 2 Lakh for each Project upto 20 MW

capacity, Rs.3 Lakh for each project above 20 MW capacity and Rs. 10 Lakh for each project of 100 MW and above along with the RfS.

3.4 Solar Park:

Solar Parks are being developed under MNRE scheme for development of 25 solar parks. The bidder will approach the solar park implementation agency for allotment of land and connectivity. The implementation agency will indicate the cost of land, annual charges etc. which the developers must take into account while bidding.

The first choice will be to locate all projects in solar parks coming up in the state for which bids are issued. NVVN will indicate the name of the park and the plot sizes as well as other details in the tender document. If the total capacity of solar power projects in the bid is higher than the capacity available in the park, the developers will be given choice to locate the project in the park or out-side on the basis the bid price i.e. the lowest bidder gets first choice followed by the next and so on & till such time as park capacity is exhausted or all remaining can be located in the park.

After the PPA is signed, it will be the duty of solar park implementation agency to provide land and connectivity as promised in writing. SPDs shall enter into an Implementation Support Agreement with SPIA / State Agency for Land & associated infrastructure for development of the Project inside the Solar Park, Connectivity with the STU / CTU System and all clearances related thereto shall be the responsibility of the SPIA / State Agency / SPD. SPIA will hand over land to developer within 3 months of signing of PPA. The developers will be given extra time if there is any delay in giving possession of land and connectivity equivalent to delay. There will however, be no compensation or L.D or deemed generation for any delay in Solar park. NVVN will have freedom to extend time by up to 3 months in case of delay in land allotment, transmission facility, Infrastructure facilities etc. Extension shall be subject to certification from Solar Park Implementing Agency (SPIA) or respective State Implementing Agency justifying reasons for delay. If extension is required to be given beyond 3 months due to delay in park development or evacuation, NVVN will approach MNRE, who will be authorized to decide on further extension with the approval of Secretary, MNRE.

3.5 Qualification Criteria for Short-Listing of Bids/ Projects

A. Financial Criteria

Net Worth: The Net Worth of the Company should be equal to or greater than the value calculated at the rate of Rs 1.5 Crores or equivalent US\$ per MW of the project capacity. The computation' of Net Worth shall be based on unconsolidated audited annual accounts of the

company. For companies incorporated on or before 1.4.2010: The Company would be required to submit last four financial years annual audited accounts i.e. 2010-11, 2011-12, 2012-13, and 2013-14 (if available) (or Calendar Years 2010, 2011, 2012 and 2013 or the accounting years as adopted by the Company and acceptable as per the laws of the respective Country) indicating the year which should be considered for evaluation, along with a certificate from the Chartered Accountant to demonstrate the fulfilment of criteria. (ii) For companies incorporated after 1.4.2010: The company would be required to submit the annual audited accounts for all the Financial Years starting from the financial year in which the company was incorporated and till the financial year ended 31st March 2014 (or starting from the first accounting year, after incorporation until 2013, as adopted by the company and acceptable as per the laws of the respective Country) indicating the year which should be considered for evaluation, along with a net worth certificate from a Chartered Accountant to demonstrate fulfilment of the criteria. Further, Bank statement starting from Day 1 of incorporation of the Project Company (if incorporated within a period of six months prior to submission of RfS application) or starting from the date six months prior to submission of RfS application. However, for new as well as existing Companies, the Net Worth criteria can also be met as on day not more than seven days prior to the date of submission of RfS by the Company. To demonstrate fulfilment of this criteria, the Company shall submit a certificate from a Chartered Accountant certifying the availability of Net Worth on the date not more than seven days prior to submission of RfS along with a Certified copy of Balance Sheet, Profit & Loss Account, Schedules and cash flow statement supported with bank statement. A foreign company can participate on standalone basis or as a member of consortium at RfS stage. Before signing of PPA it has to form an Indian Company registered under the Indian Companies Act. {Note: For the Qualification Requirements, if data is provided by the Project Developer in foreign currency, equivalent rupees of Net Worth will be calculated using bills selling exchange rates (card rate) USD / INR of State Bank of India prevailing on the date of closing of the accounts for the respective financial year as certified by the Project Developer's banker. For currency other than USD, Project Developers shall convert such currency into USD as per the exchange rates certified by their banker prevailing on the relevant date and used for such conversion. }

Net Worth:

Paid up share capital

Add: Free Reserves

Subtract: Revaluation Reserves

Subtract: Intangible Assets

Subtract: Miscellaneous Expenditures to the extent not written off and carry forward losses

****** Share premium will form an integral part of Net worth provided it is realized in cash or cash equivalent. However, this condition will not apply in case of listed Companies.

******* (a) Paid-up Share Capital will include (i) paid-up equity share capital, (ii) fully, compulsory and mandatorily convertible preference share and (iii) fully, compulsory and mandatorily convertible debentures.

(b) Share premium will form an integral part of net worth provided it is realized in cash or cash equivalence.

For the purposes of meeting financial requirements only unconsolidated audited annual accounts shall be used. However, audited consolidated annual accounts of the Company may be used for the purpose of financial requirements provided the Project Developer has at least twenty six percent (26%) paid-up share capital in each Company whose accounts are merged in the audited consolidated account and provided further that the financial capability of such Companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

If the RfS is submitted by a Consortium the financial requirement to be met by each Member of the Consortium shall be computed in proportion to the equity commitment made by each of them in the Project Company. Any Consortium, if selected, shall, for the purpose of supply of power to NVVN, incorporate a Project Company with equity participation by the Members before signing the PPA with NVVN. The Project Developer may seek qualification on the basis of financial capability of its Parent Company and / or its Affiliate(s) for the purpose of meeting the Qualification Requirements. In case of the Project Developer being a Bidding Consortium, any Member may seek qualification on the basis of financial capability of its Parent Company and / or its Affiliate(s). An Indian company can form an SPV for execution of the project before signing of PPA. Net worth requirement for each bidder shall apply for projects allotted to that bidder out of full quantity of 3000 MW.

Infusion: Minimum paid up share capital will be Rs. 1.2 crore per MW. 20% of the paid up share capital shall be infused at the time of signing of PPA and 50% at the time of Financial Closure and shall be supported with the relevant bank statements. Remaining will have to be infused before commissioning.

B. Technical Criteria

Under this scheme, it is proposed to promote only commercially established and operational technologies to minimize the technology risk and to achieve the commissioning of the Projects.

The detailed technical parameters for Solar PV Power Projects to be selected are specified in Annexure 1A.

C. Connectivity with the Grid

- (i) The Solar Power Plant shall be designed for inter-connection with the Pooling Substation at the Solar Park or STU / CTU substation as applicable through dedicated transmission line / cable at voltage level of 33 kV and above.
In case the Project is being set – up on Land other than at Solar Park, the Solar Power Developer shall submit a letter from the STU / CTU along with RfS confirming technical feasibility of connectivity of plant to STU / CTU substation.
- (ii) The entire cost of Transmission from the project up to the interconnection point including cost of construction of line, wheeling charges, losses etc. will be borne by the Project Developer and will not be reimbursed by NVVN or met by the STU / CTU / DISCOMs.
- (iii) The responsibility of getting Transmission Connectivity and Access to the transmission system owned by the STU / CTU will lie with the Project Developer and shall be at the cost of SPD.
- (iv) The Solar Power Developer shall not be entitled to any deemed generation in case of any delay in connectivity to the Project.
- (v) Solar Park implementation agency will provide inter connection facility close to the park at voltage level which will be specified. The developer will have to connect to that point at his cost.
- (vi) CTU/STU shall endeavour to match the commissioning of the transmission system with the commissioning of the solar projects.
- (vii) Any transmission line constructed by CTU for Solar Park(s) will be construed as Inter-State Transmission System (ISTS). If ISTS network is used, minimum 10% power should flow out of the State.

D. Domestic Content Requirement

MNRE shall intimate the capacity to NVVN before announcement of State Specific Bid. Under DCR, the solar cells and modules used in the solar PV power plants must both be made in India.

In case of crystalline Silicon technology, all process steps and quality control measures involved in the manufacture of the Solar Cells and Modules from P-type (or N-type) wafers till final assembly of the Solar Cells into Modules shall be performed at the works of PV manufacturers in India. The requisite P-type (or N-type) wafers and other raw materials can be imported.

In case of Thin-film technologies, the entire Modules assembly comprising of Thin-film Solar Cells shall be manufactured in India. The starting substrate (without any semiconductor junction) and other requisite raw materials can be imported.

The Developers at the time of bidding may opt for either “DCR Category” or “Open Category” or both the categories. The Developers will submit separate Bids under both the categories.

3.6 Short-listing of Projects

For selection of projects, NVVN shall evaluate only those applications which are received by the appointed date and time at the Head Office of NVVN. NVVN will evaluate the Projects for short listing Projects / Developers based on the qualification criteria specified under the Guidelines and all the projects meeting the criteria shall be short-listed by NVVN.

3.7 Selection of Projects based on Applicable Tariff

The selection of Projects shall be done through e-bidding as detailed below:

(A) Procedure for situation A (para 2.1): The total quantity in MW will be divided into projects of same or different sizes (e.g. 500 MW will be divided into 10 projects of 50 MW each. It could be different sizes also like that 140MW may have 4 projects of 25 MW and 4 projects of 10 MW each)

The bidders will give technical as well as financial bids together electronically for which NVVN will use an appropriate platform. After technical bids are evaluated, financial bids will be opened for the bidders who qualify on the bid opening date. The bidders can bid for any numbers of projects. They will however have to show net worth for the quantity allotted. The projects will be numbered as P1, P2, and so on. The various sizes of projects will be grouped into S1, S2, S3, and so on. The detail procedure for evaluation of the bid and selection of the bidder shall be developed by NVVN.

(B) Procedure for situation B & C (para 2.1): The bids will be arranged in ascending order of tariff bids received. The bid with lowest tariff will be marked L1. The detail procedure for evaluation of the bid and selection of the bidder shall be developed by NVVN.

(C) Technical Evaluation: Technical evaluation for each bidder will be valid for all bids in 3000 MW. This would imply that if a bidder is evaluated in 1st bid, same evaluation will be used if he bids in the 2nd or 5th or any bid in this 3000 MW. However, new bidders can come in 2nd and subsequent bids and they will be evaluated in that bid for all subsequent bids.

(D) Net Worth: Net worth of each bidder will be applied on the entire quantity of the 3000MW batch. Therefore, the total quantity that a bidder can be allotted out of the 3000MW batch will be determined by his net worth. He may however update his net worth for each bid.

3.8 Power Purchase Agreement

A copy of Draft Power Purchase Agreement to be executed between NVVN and the Project Developer shall be provided by NVVN along with Invitation for Submission of RfS. Within one month of the date of issue of Letter of Intent (LoI), the Power Purchase Agreement between NVVN and the Project Developer for Purchase of Power from the project will be executed. The PPA shall be for a period of 25 years from the date of CoD.

The developers will be free to reconfigure and repower their plants from time to time during the PPA duration. However, NVVN will be obliged to buy power only within the Capacity Utilization Factor (CUF) range laid down in Power Purchase Agreement (PPA) as per guidelines.

Excess power generated will be purchased at a notional Support Price of Rs. 3 per kWh only. The developers are free to operate their plants after expiry of the 25 years PPA period. However, any extension of the PPA beyond 25 years shall be through mutual Agreement between the Solar Power Developer and NVVN. They may take land for longer period (40 years is recommended).

NVVN will execute a Power Sale Agreement (PSA) with the State Utilities/ Discoms of the buying States for sale of power to them valid for 25 years. Further, State Utilities/ Discoms will have to maintain LC and Escrow Arrangement as may be defined in the PSA. State Utilities/ Discoms will pay to NVVN for the excess generation at the Bundled Power Rate.

3.9 Bank Guarantees

The Project Developer shall provide the following Bank Guarantees to NVVN in a phased manner as follows:

- (i) Earnest Money Deposit (EMD) of Rs. 10 Lakh/MW in the form of Bank Guarantee along with RfS.
- (ii) Performance Bank Guarantee of Rs. 20 Lakh/MW at the time of signing of PPA.

In addition to the Performance Bank Guarantee of Rs. 20 Lakh/MW to be provided at the time of signing of PPA, the Bank Guarantees towards EMD will also be converted into Performance Bank Guarantee.

In case, NVVN offers to execute the PPA with the Project Developer and if the Project Developer refuses to execute the PPA within the stipulated time period, the Bank Guarantees towards EMD shall be encashed by NVVN. In case the Project is not selected, NVVN shall release the Bank Guarantees within fifteen days of the issue of LoI to selected Projects. The Performance Bank Guarantees shall be valid for a period of 13 months from the date of signing the PPA. In case any extension is given to the project, the corresponding extension needs to be made in the PBG.

3.10 Minimum Paid up Share Capital to be held by the Promoter

The Company developing the project shall provide the information about the Promoters and their shareholding in the company to NVVN indicating the controlling shareholding before signing of the PPA with NVVN.

No change in the shareholding in the Company developing the Project shall be permitted from the date of submitting the RfS till the execution of the PPA. However, this condition will not be applicable if a listed company is developing the Project.

After execution of PPA, the controlling shareholding (controlling shareholding shall mean more than 50% of the paid up share capital) in the Company developing the project shall be maintained for a period of (1) one year after commencement of supply of power. Thereafter, any change can be undertaken under intimation to NVVN. This condition would not apply to the cases where substitution of Promoter / Controlling Shareholder is necessitated by action of and request by Leading Financial Institution / Lender.

In the event of Change in Shareholding / Substitution of Promoters triggered by the Financial Institutions leading to signing of fresh PPA with a New Entity, an amount of Rs. 10 Lac / Project as Facilitation Fee (non-refundable) shall be deposited by the developer to NVVN.

3.11 Financial Closure

The Project Developer shall report Project Financing Arrangements within 210 days from the date of signing Power Purchase Agreement. At this stage, the Project Developer would also furnish the necessary documents to establish possession in the name of the Project Developer of the required land / Lease Agreement (minimum 2 ha per MW) and the requisite technical criterion have been fulfilled.

In case of delay in achieving above condition as may be applicable, NVVN shall encash Performance Bank Guarantees and shall remove the project from the list of the selected projects, unless the delay is on account of delay in allotment of land in Solar Park or by Government or delay in transmission line or Force Majeure. An extension can however be considered, on the sole request of SPD, on payment of a penalty of Rs. 25,000/- per day per MW. This amount will go into the Payment Security Fund. This extension will not have any impact on the Scheduled Commercial Operation Date.

NVVN can extend the time for financial closure and commissioning date by upto 3 months, without any financial implications on the SPD, if there are delays in land allotment or connectivity and in States where solar park is not likely to be ready for a particular bid, NVVN may allow all

bidders to choose their site on their own anywhere in the State. For any extension beyond 3 months, NVVN will approach MNRE, who will be authorized to decide on further extension with the approval of Secretary, MNRE.

3.12 Commissioning

3.12.1 Part Commissioning:

Part commissioning of the Project shall be accepted by NVVN subject to the condition that the Minimum Capacity for acceptance of first part commissioning shall be 50% of Project Capacity subject to balance Project Capacity thereafter. Part commissioning shall not be applicable for Projects having capacity of 10MW. The commissioned capacity shall be considered in the steps of 10 MW unit size. The PPA will remain in force for a period of 25 years from the date of CoD of the first part commissioning of the project.

3.12.2 Commissioning Schedule and Liquidated Damages for Delay in Commissioning:

In case of Solar PV, the Project shall be commissioned within 13 months from the date of signing of PPA. In case of failure to achieve this milestone, NVVN shall encash the Performance Guarantee in the following manner:

Delay up to five month: NVVN will encash the Performance Bank Guarantee on per day basis and proportionate to the Capacity not commissioned, with 100% encashment for 5 months delay.

Delay beyond five month: In case the commissioning of project is delayed beyond 5 months, the Project Developer shall, in addition to encashment of Bank Guarantee, pay to NVVN the Liquidated Damages at the rate of Rs 1,00,000 / MW per day of delay for the delay in such remaining Capacity which is not Commissioned. The maximum time period allowed for commissioning of the full Project Capacity with encashment of Performance Bank Guarantee and payment of Liquidated Damages shall be limited to 25 months from the Date of Signing of PPA. The amount of Liquidated Damages worked out as above shall be recovered by NVVN from the payments due to the Project Developer on account of Sale of Solar Power to NVVN. In case, the Commissioning of the Project is delayed beyond 25 months from the date of signing of PPA, the PPA capacity shall stand reduced / amended to the Project Capacity Commissioned and the PPA for the balance Capacity will stand terminated and shall be reduced from the selected Project Capacity.

Committee handling the Payment Security Payment Account (PSPA), may consider giving 10% of the penalty charges for delay i.e. bank guarantee encashed and penalty collected to the STU/CTU, as the case may be, if the project is delayed beyond the date as provided for in PPA,

even though the Transmission/ evacuation system is ready thereby resulting in system lying idle. SPDs shall enter into an Implementation Support Agreement with SPIA / State Agency for Land & associated infrastructure for development of the Project inside the Solar Park, Connectivity with the STU / CTU System and all clearances related thereto shall be the responsibility of the SPIA / State Agency / SPD. As part of this agreement, 10% of the PBG shall be executed in the name of SPIA.

3.13 Commercial Operation Date (CoD):

The projects commissioned during a month shall be entitled for payment of energy @Rs. 3.00/kWh as infirm power till Commercial Operation Date (CoD). The Project CoD shall be considered 30 days from the actual date of commissioning. CoD is intended to match allocation and availability of thermal power for bundling. The 25 year tenure of PPA shall commence from Commercial Operation Date.

3.14 Time Schedule for Bidding under State Specific Bundling Scheme:

Selection of Solar PV Projects under the State Specific Bundling Scheme shall be carried out according to the timelines which shall be notified at the time of the State Specific RfS.

SECTION-IV

OTHER PROVISIONS

4.1 Role of State Nodal Agency

It is envisaged that the Agency appointed by the State Govt. shall act as a State Nodal Agency, which will provide necessary support to facilitate the development of the Projects to be developed on Solar Parks with necessary infrastructure facilities. This may include facilitation in the following areas:

- (i) Coordination among various State and Central agencies for speedy implementation of projects
- (ii) Support during commissioning of projects

4.2 Role of State Transmission Utility

It is envisaged that the State Transmission Utility will provide transmission system to facilitate the evacuation of power from the Projects which may include the following:

- (i) Provide connectivity to the Solar Projects with the grid
- (ii) Support during commissioning of projects
- (iii) Coordination among various State and Central agencies for evacuation of power.

4.3 Role of Solar Park Implementation Agency (SPIA)

The SPIA shall undertake the following activities to achieve the objectives of speedy establishment and implementation of Solar Park in the Host State:

- (i) Develop, plan, execute, implement, finance, operate and maintain the Solar Park
- (ii) Identify potential site and to acquire/possess land for Solar Park
- (iii) Carry out site related studies / investigations.
- (iv) Obtain statutory & non statutory clearances and to make area development plan within Solar Power Park.
- (v) Frame out transparent plot allotment policy and specify procedures pursuant to the relevant State policies and their amendments thereof.
- (vi) Enter into Lease agreement and give possession before Financial Closure to SPD for the entire period of the Project.
- (vii) Enter into an Implementation Support Agreement with SPDs for Land & associated infrastructure for development of the Project inside the Solar Park, Connectivity with the STU / CTU System.
- (viii) Hand over land to developer within 3 months of signing of PPA.

While it will be the endeavor of the State Agencies /Central Agencies as described above

to facilitate support in their respective area of working but nevertheless, SPDs shall be overall responsible to complete all the activities related to Project Development at its own risk and cost.

4.4 Amendment to the Guidelines

Any modification to these guidelines, if necessary, shall be carried out so as to achieve the objectives of the National Solar Mission.

4.5 Power to Remove Difficulties

If any difficulty arises in giving effect to any provision of these guidelines or interpretation of the guidelines or modification to the guidelines, the Secretary of the Ministry of New and Renewable Energy shall decide the matter, which will be binding on all parties concerned. Ministry of Power may be consulted for any issue involving transmission or concerning Ministry of Power.

Any inconsistencies, due to oversight, may be rectified, after obtaining the approval from the Secretaries of the Ministry of Power and the Ministry of New and Renewable Energy.

A committee shall be set up under chairmanship of Joint Secretary, Solar with representatives from CEA, Ministry of Power and NVVN to make recommendations and examine issues that may need intervention of MNRE or clarification. Representatives from States may also be invited as may be required. Issues like size of projects, schedules, maximum capacity for bidders, etc. may be referred to this Committee.

4.6 Payment Security Fund

A Payment Security Fund / Working Capital Fund will be set up with a corpus of approximately Rs. 2,300 Crores in order to ensure timely payment to the developers. Accruals from encashment of Bank Guarantees, Penalties/Liquidated Damages on developers, etc. will also accrue to the fund. The difference between sale price of bundled power and fixed Rs. 3/kWh paid for excess generation will also go into Payment Security Fund. Performance Guarantee Deposit may also be used in Payment Security Fund. Litigation charges, costs & claims, if any, may be paid from the Payment Security Fund.

4.7 Solar Park Scheme:

The provisions of Solar Park Scheme notified by the Ministry of New & Renewable Energy vide No.30/26/2014-15/NSM dated 12th December, 2014 would be applicable for the solar projects to be set up in the Solar Park.

4.8 Performance Guarantee Deposit:

Performance Guarantee Deposit of Rs. 10 lakh per MW to be raised in 2 years by deducting from payments to developers in 24 equal installments. It will stay with NVVN for 25 years. The PGD

shall be refunded to SPD without interest within three months after expiry of the 25 Year term of PPA subject to satisfactory performance of the project. In case the developer winds up his project or terminates the PPA prior to the completion of the 25 Year term of PPA, the PGD shall be forfeited. Performance Guarantee Deposit may also be used in Payment Security Fund.

4.9 Other:

The elaborations/clarifications issued during bidding for NSM Phase-II scheme shall be appropriately incorporated in the next version of these Guidelines.

Technical Requirements for Grid Solar PV Power Plants

The following are some of the technical measures required to ensure quality of equipment used in grid connected solar photovoltaic power projects:

1. SPV Modules

- 1.1 The SPV modules used in the grid solar power projects must qualify to the latest edition of any of the following IEC PV module qualification test or equivalent BIS standards.

Crystalline Silicon Solar Cell Modules	IEC 61215
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Thin Film Modules	IEC 61646
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Concentrator PV modules	IEC 62108
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- 1.2 In addition, SPV modules must qualify to IEC 61730 for safety qualification testing at 1000V DC or higher. The modules to be used in a highly corrosive atmosphere throughout their lifetime must qualify to IEC 61701.

2. Power Conditioners/ Inverters

The Power Conditioners/ Inverters of the SPV power plants must conform to the latest edition of IEC/ equivalent Standards as specified below:

Efficiency Measurements	IEC 61683
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Environmental Testing	IEC 60068 -2/IEC 62093
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EM Compatibility (EMC)	IEC 61000-6-2, IEC 61000-6-4 & other relevant parts of IEC 61000
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Electrical safety	IEC 62103/ IEC 62109-1&2
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Anti-Islanding Protection	IEEE 1547/IEC 62116/UL 1741 or equivalent BIS Standards
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3. Other Sub-systems/ Components:

Other subsystems/components used in the SPV power plants (Cables, Connectors, Junction Boxes, Surge Protection Devices, etc.) must also conform to the relevant international/ national Standards for Electrical Safety besides that for Quality required for ensuring Expected Service Life and Weather Resistance. (IEC Standard for DC cables for PV systems is under development. It is recommended that in the interim, the Cables of 600-1800 Volts DC for outdoor installations should comply with the draft EN50618/TUV 2pfg 1169/09/07 for service life expectancy of 25 years).

4. Authorized Test Centers

The PV modules / Power Conditioners deployed in the power plants must have valid test certificates for their qualification as per above specified IEC/ BIS Standards by one of the NABL Accredited Test Centers in India. In case of module types like Thin Film and CPV / equipment for which such Test facilities may not exist in India at present, test certificates from reputed ILAC Member Labs abroad will be acceptable.

5. Warranty

PV modules used in grid solar power plants must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

6. Identification and Traceability

Each PV module used in any solar power project must use a RF identification tag. The following Information must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions.)

- i. Name of the manufacturer of PV Module
- ii. Name of the Manufacturer of Solar cells
- iii. Month and year of the manufacture (separately for solar cells and module)
- iv. Country of origin (separately for solar cells and module)
- v. I-V curve for the module at Standard Test Condition (1000 W/m², AM 1.5, 25°C)
- vi. Wattage, I_m , V_m and FF for the module
- vii. Unique Serial No. and Model No. of the module
- viii. Date and year of obtaining IEC PV module qualification certificate
- ix. Name of the test lab issuing IEC certificate
- x. Other relevant information on traceability of solar cells and module as per ISO 9000

Site owners would be required to maintain accessibility to the list of Module IDs along with the above parametric data for each module.

7. Performance Monitoring:

All grid solar PV power projects must install necessary equipment to continuously measure solar radiation, ambient temperature, wind speed and other weather parameters and simultaneously measure the generation of DC power as well as AC power generated from the plant. They will be required to submit this data to NVVN and MNRE or any other designated agency on line and/or through a report on regular basis every month for the entire duration of PPA. In this regard they shall mandatorily also grant access to NVVN and MNRE or any other designated agency to the remote monitoring portal of the power plants on a 24 x 7 basis.

8. Safe Disposal of Solar PV Modules:

The developers will ensure that all Solar PV modules from their plant after their 'end of life' (when they become defective/ non-operational/ non-repairable) are disposed off in accordance with the "e-waste (Management and Handling) Rules, 2011" notified by the Government and as revised and amended from time to time.

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